
Furniture and Related Facilities to Accommodate Multi-Media Activities in Libraries

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MULTI-MEDIA CENTER DESIGN should be based upon a carefully researched and charted plan that incorporates a primary concern for the instructional program and the clientele to be served. The plan should be amenable to probable changes in technology, curriculum and instructional aims, staff competency and composition, community structure, and administrative organization.

One or more activities identified under the plan should consider furniture and related facilities to be used in the center. It is apparent that these activities should not be undertaken independent of other activities that assess and determine 1) instructional strategies, 2) physical size of the center, 3) physiological and psychological characteristics of the center's clients and staff, 4) financial resources, and 5) time allowed for completion of the center. Each center therefore, will represent a unique composite of features and the activities relating to the furniture and facilities will result in decisions which are also unique to that center.

Often the identification and purchase of furniture will need to take place on fairly short notice and under limiting conditions. When such is the case, the person given the problem of selection cannot work under the more-or-less ideal conditions of the PERT chart or critical path method.¹ The type of purchase that stems from one person making a decision without adequate participation by other staff, or without consideration for such factors as the availability of a repair agency or a sufficiently trained staff to conduct the type of activity called for by the inclusion of the item or feature in the media center, can leave

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the purchaser, the user and the administrator unhappy. As a practitioner, the author has seen too many instances where sophisticated equipment and facilities have been placed in media centers only to lie fallow because not enough trained staff members were on hand to realize the potential of the purchase by utilizing the equipment and training users, or where there was insufficient budget to supply accompanying materials and repair parts or accessories to make the initial items worthwhile. Too often, new furniture and facilities are pushed to one side, converted to older practices, or removed to a dead storage area. If faced with the need for accountability, many facets of the media center might be found wanting in the area of the utilization of furniture and facilities already on hand.

More than ever before, boards of education and tax payer groups are asking valid questions concerning the value of non-print materials and equipment in the learning and teaching process. It might be wise to consider each purchase from the doubting standpoint of a critic and carefully justify the selection of any hardware system or piece of furniture.

Before proceeding any further, the author will state his purpose for this article and what he hopes the reader will achieve. The purpose of this article is to assess the current state of furniture art and to note certain types of facilities that are emerging and have potential merit for present and future media center design. The purpose is not to prescribe any specific solution, promote any particular product, nor predict success for any approach. The decisions to be made for any one center should result, as stated above, from a careful and comprehensive study of the many factors which will be involved.

The goal is to ensure that the reader, after reading the article, will be better acquainted with the types of furniture and facilities now available, the ability of industry to provide answers to media center design problems, and the competitive approaches to similar design problems taken by industry. The reader will have an understanding of the basic design considerations that should be studied before decisions are reached, and he will be given a sample listing of firms that represent a large industry and that have exhibited innovative products. A final objective will hopefully be to leave the reader with a sense of his own ability to devise and create innovative furniture and facilities based upon his individual program and center needs and with a sense of his obligation to share his innovative ideas with others, including industry.

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A review of the literature in the area of furniture and facilities for multi-media use yields much valuable reading. In addition to the literature, informal discussions with school architects, furniture designers, and other consultants provide useful information. A third route to information consists of visiting center installations and observing them in use. Witnessing the advantages and disadvantages of various items as they function in a center can sometimes tell a different story from the one printed in the attractive brochure. These three routes of study—1) books, brochures and periodicals (see the Additional References at the end of the article); 2) human resources, through live interviews and written communications; and 3) visitation—are recommended to anyone seeking information relative to our topic.

The person seeking solutions to furniture and facility problems should have concern for trends in instructional, industrial and sociological designs. This concern will often be manifested in doubts or uncertainty about whether the design is compatible with established or innovative standards, will function suitably with other elements, or will become obsolete before it is operational. The desire to select the best in furniture and facilities leads the intelligent selector to attempt to gain some indication as to the portents of the future for our culture (including human living patterns), the nature of building construction, and the "life" of appurtenances that will surround man and his institutions.

An interesting book by Alvin Toffler entitled *Future Shock* assembles observed trends in our culture into some basic premises that hold promise for better decision-making. A brief summary of a few of Toffler's hypothetical forecasts follows. Transience is the name of the game with the existence of mobile, modular buildings assembled in sections capable of expansion, contraction, and changing accessory features; of throwaway equipment and materials designed to achieve specific and/or limited purposes and designed with a short life to permit adjustment to obsolescence; of modular plug-ins and electronic control units capable of easy replacement and expansion to provide additional service; of a movement toward rentalism of equipment and furniture; and of mobile teaching, administrative and student populations.² As student and community characteristics change, the nature of the school and its furniture and facilities will change. Future populations may become "new nomads."

One consideration, then, of furniture and facilities to be placed in

the media center is the extent to which they can be altered or rearranged for various purposes, disposed of easily, and tied or linked to other fluid designs or components. Rather than permanently imbedding conduit in concrete to reach certain fixed receptacles, is it possible to have the entire carpet capable of carrying power to infinite points, or to have flexible and unobtrusive ducting that can change its physical shape and structural pattern to suit fluid instructional arrangements? As wild as these thoughts seem, our culture already has embarked upon this constant restructuring. Just as New York City may never stop being rebuilt and rearranged, media centers and their internal service components may always be in flux with the new constantly being added to, or substituted for, the old. The pace of obsolescence in media centers can already be seen in many schools.

Again, recognizing these trends, the chair that becomes a table, that becomes a shelf, that becomes a divider, that becomes something else, is an item of furniture that may be a more practical decision than previous conventional chair designs. Instant carrels that store compactly, assemble easily, offer a raceway that accommodates a retractable power cord, and have input and output jacks at the end of the panel are now on the market. These carrels also feature interlocking partitions which can be set up and disassembled without tools. Cabinets are available that offer lateral flexibility of shelving and snap-in back panels that change from unit chalkboard (movie screen) to a built-in board mounted on casters, and that can be readily set up as dividers or partitions. Cable mold conduit of rubber and plastic carries current anywhere, and textured fabric-covered curved screen panels offer acoustical separation to work areas. Wireless loop audio systems and inexpensive cassette players can offer flexibility and fluidity.

The multi-media center has typically been divided physically into functional areas. One way to review various items of furniture is to consider them in terms of their placement within a functional area. These areas, as well as individual furniture items, may be identified as follows: print and nonprint materials storage; media equipment storage; library/media staff areas—the administrative control center; teacher/student materials preparation area; independent and group study areas; professional library area; educational and commercial television/radio viewing and listening area; study carrels; seating, tables and visual display units; and area partitions and cabinets. In addition there are common elements that exist in more than one area. These include lighting and acoustical treatments; electrical power

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wiring and conduit; selection of complementary color and textured surfaces; proportions, scale, and style of furniture; audio delivery systems; etc. Care taken in selecting these components will pay off in creature comfort, convenience, and other physical and psychological easements.

Before considering furniture and facilities for media use in the various functional areas of the library, we should note the somewhat different approaches to solutions of problems in equipping primary or elementary schools and secondary schools. The library media center for the early learning years may now feature very low furniture groupings that can be moved from place to place over a heavily carpeted area. Oriental-like in design, pads and cushions often replace chairs, and reading wells offer groups a pleasant, informal focus. Many furniture firms have hired design consultants to create lively and innovative designs for these "first" learning centers (see Appendix for a list of suppliers), whereas the middle and secondary schools' media center furniture possibilities are still rather stereotyped and formal in appearance, although some architects and planners have set out to provide such casual items as space for a modern fireplace with relaxing chairs before it (which is usually the first choice of students who enter to use the center.) The 1970 ALA Conference had displays of many redesigned items of furniture, but innovation was not as apparent for the secondary school library as for the elementary. The displays, in the author's estimation, still exhibited an over-indulgence with furniture and facilities for handling printed materials, although some furniture firms offered extremely functional designs. Some expensive foreign-made items seemed to offer the best evidence of good design, but glimpses of the expected exciting future were infrequently perceived by suppliers.

Because of changes and shifts in educational schemes (curriculum and instructional programs that emphasize differentiated staffing, individualized approaches to learning, including prescriptive teaching, relevance to the world about the student, less static courses, more course offerings), we can perhaps generalize and observe that furniture and facilities will vary more in size, function, and appearance than their predecessors. They will need to suit clients exhibiting greater variability in age, size, occupational type, economic level and experiential background. There will be more items with specialized characteristics such as provision for digital response or audio/active equipment. There will also be items more capable of being turned,

combined, or converted to differing instructional needs. Built-in electronics will be of a plug-in modular type to permit rapid repair through replacement.

The following discussion of furniture and facilities by functional areas will be most relevant to middle or secondary comprehensive high schools.

PRINT AND NONPRINT MATERIALS STORAGE

Adequate storage areas for materials of varied sizes and shapes call for efficient means to conserve space and provide quick access to items. The furniture industry has produced an admirable solution, in the form of a cabinet to most storage problems. Known by various trade names, this cabinet stores tremendous quantities of items and still permits ready access to any item. Audio cassette and 8 mm. film loop libraries will multiply in number and can be fit into this type of storage unit. Shelving can be adapted to hold any type of material, even large charts and pictures, as well as 3-D globes and sculpture pieces. One disadvantage is that only a very few people at a time can use and move a cabinet. This limits the expandable units to infrequent individual use items and/or staff use. Other cabinets on casters can provide storage of materials that can be shunted about in open areas. These will also provide an answer to shifting partition problems.

Another specific storage problem is that of providing space for personal items carried by students to library/media center areas. Large handbags, books, and other materials can clutter table and carrel tops. A means should be sought to provide storage for student property. There is a possibility that such new media items as headsets, cassette recorder/playbacks, cassettes, etc., can disappear unless some plan is made for adequate check-out procedures, and the temptation to remove such items from the center along with other legitimate personal items is diminished. Control of paperback books and cassettes especially is needed.

Industry has developed several solutions for smaller collections of cassettes that can be located near the materials control center of the media center. One inexpensive rack displays cassettes on a lazy suzan arrangement. Even less expensive cassette storage can be handled with the plastic notebook holders now available that store sixteen cassettes per volume. In large center installations where rooms or sections are set up for independent or class study within specific disciplines (such as science and technology, social sciences, foreign

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language, etc.), small resource collections of cassettes, reference books, and other media bits can be placed in cassette volumes and tote-bin storage cabinets.

MEDIA EQUIPMENT STORAGE

If the media center holds responsibility for all equipment to be distributed throughout the school, a secure area needs to be identified. Vandalism and theft appear to be increasing within school systems, and much media equipment has potential value outside the educational field. Television receivers, motion picture projectors, recorders, etc., should be stored where they will be secure. Within this area, open steel shelving of varying dimensions still affords the most practical storage although such equipment is heavy and bulky. Sturdiness and flexibility of shelf space should be prime criteria for shelving. Built-in cabinets for filmstrips and records are available from many suppliers.

A word should be said here concerning furniture that offers internal structuring for specific use of media systems and pertinent materials storage. The limitations of such furniture, aside from higher initial expense, often outweigh their unitary advantage. Furniture that permits expansion, contraction, alteration, or differing arrangements of components, in the long run usually proves to be a more valid investment. Microfilm and microfiche readers, as well as coin-fed copying devices, may need to be placed in a canteen-type area where students can independently draw upon their services. While furniture can be purchased that has built-in rear projection devices, simple and inexpensive fold-up screens can usually offer a more flexible solution.

LIBRARY/MEDIA STAFF AREAS—

THE ADMINISTRATIVE CONTROL CENTER

Furniture for the administrative control center area becomes more differentiated when multi-media approaches are introduced. Several firms have modular units that fit together into a comprehensive service function.

Distribution of individual items such as playbacks, film loop projectors, headsets, or listening center equipment, cassette and film materials, as well as program source equipment such as wireless systems head-end gear, intercom units, and patch panels requires new cabinet, shelf, and console-type arrangements. Such a control center should be in view of powered carrels or dial access information and retrieval systems equipment or computer terminals in order to offer assistance to users and to monitor the physical use of expensive systems.

A media processing area that may be combined with the teacher materials preparation area should include the typical furniture and facilities as competently explained in the publication entitled *Learning Resources Library* and published by the North Carolina Department of Public Instruction.³

TEACHER/STUDENT MATERIALS PREPARATION AREA

Every multi-media center should have a facility that will be furnished with cabinets, counters, work stools, benches, a sink, racks, and shelving capable of permitting teaching staff and students to prepare instructional materials. Art and craft equipment, simple photographic materials and reproducing devices, a paper cutter, mounting, matting, and laminating presses and boards, small power tools, etc., should be provided. A partial list of furnishings for such an area (preferably acoustically treated and visually separated from other functional areas) would include the following:

Permanent facilities

- 1) a double stainless steel sink in a counter 15 to 20 feet long with storage cabinets below and a counter top at least 30 inches deep

Storage cabinets

- 1) 30-inch high cabinets on rollers with formica tops for storage of 30-inch by 40-inch cardboard with shallow shelves in lieu of drawers
- 2) 30-inch high cabinets on rollers with formica tops and tote trays
- 3) 30-inch high cabinets on rollers with formica tops and sliding doors and shelves
- 4) 72-inch high cabinets with doors for storing supplies
- 5) storage cabinets without doors (just shelves or bins for storage of supplies)

Drawing board stand

- 1) which would hold portable drawing boards that would be stored horizontally in thin shelves
- 2) equipped appropriately with scales, pencils, drawing instruments, erasers, triangles and other drafting tools

Tool storage cabinet

- 1) containing portable hand and power tools, i.e., portable electric

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jig saw, portable $\frac{3}{8}$ -inch electric drill hammers, screw drivers, drills, and hand tools of like nature

- 2) storing an assortment of nails, screws, a staple gun, staples, etc.

Work tables

- 1) on rollers or otherwise easily moved
- 2) with laminated maple tops, and capable of being used separately or being clustered together with the 30-inch high storage cabinets described above to form very large work tables

Work tables—industrial arts type

- 1) complete with metal vise and wood vise, laminated maple top, drawers, and on rollers

INDEPENDENT AND GROUP STUDY AREAS

Furniture and facilities for these areas are discussed under other sections but a word should be said for the lounge type area for relaxing and which would provide space for independent study utilizing wireless loop transmission and for student check-out of portable equipment. Some people like to learn supine; furniture for libraries could include a tilted board appropriately upholstered with tablet or shelf arms for casual perusal of periodicals (as yet unavailable).

PROFESSIONAL LIBRARY AREA

This area of the library will contain professional publications as well as film, video tape, cassette, and other materials. Furniture and facilities should be conducive to mulling and browsing and contain comfortable seating and visual displays of current acquisitions, etc. The area should be in proximity to the materials development area where copying and transparency-making devices are located. Master sets of overhead transparencies and other materials should be at hand. There should be multi-use tables that can be placed together to form surfaces of varying size for individual and group use. Furniture should also be provided for independent study by teachers utilizing programmed cassettes and slide/filmstrip viewers.

EDUCATIONAL AND COMMERCIAL TELEVISION/RADIO VIEWING AND LISTENING AREA

Within the casual reading area, radio and TV reception should be furnished. Acoustic treatment should be adequate and/or the possi-

bility of headset listening through wireless loop systems. An appropriate rear projection device could flip slowly through available program schedules. Lighting fixtures could be of the functional home-type with placement to avoid glare on the face of the TV receiver. The TV receiver and radio might be a console of living room quality. If desired, a record player could also be located in this area and a selection of recordings arranged on an attractive display rack.

STUDY CARRELS

As another article in this issue is devoted to electronic carrels, the author will not attempt to discuss these but would like to note that many types are available that offer a wide range in electronic capability. There are different opinions held by library/media personnel concerning the number, placement, and design of carrels. Some new multi-media centers consist almost solely of carrels, with the typical library tables nonexistent. The carrels in these instances are often in clover leaf groupings rather than along walls. Some users believe that this reduces student-to-student distraction to some extent. Lighting should be studied to avoid window or artificial light glare. Legs of many carrels provide the raceway for conduit, but getting power to the carrel location can be a problem. Often tunnel-like cable mold can be used judiciously over the floor's surface. Remember here that the possibility of changing program needs should be carefully assessed before extensive purchasing of restrictive carrel equipment.

SEATING, TABLES AND VISUAL DISPLAY UNITS

Seating for multi-media centers should be comfortable, simple in design, structurally sturdy, and harmonious with other elements of the decor. Each of the various materials used for seating has unique advantages and disadvantages. A study of these has not shown a significant overall superiority of any one material. The integrity of the manufacturer is the best guide to selection.⁴ A new exciting design consists of a chair that can be used for several purposes through stacking and other arrangements. Future chair designs will add excitement and diversity to the media center. Fluid in shape and convertible into many forms, styrofoam, inflatable plastic, and new wood and metal furniture will offer students informality and interest.

Many library tables now include provision for power, with electrical outlets on the apron, beneath, or in the center top of the table. Many

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have jacks for headsets and other provisions for listening center activity. Glare-free surfaces on table and carrel tops are mandatory.

Visual display cabinets are available in many different forms that provide for light and sound display equipment. Not enough is done to utilize display areas in multi-media centers to motivate student interest in public affairs, community endeavors, technology, and other potential study topics; that is, posters are often seen, but three dimensionals and large illuminated photo, loop, and rear-screen projectuals are seldom observed. The materials preparation area can be the heart of such multi-media communication devices. The type of display we have just discussed needs to be differentiated from electronic display devices that permit a computer to display questions, instructions, illustrations, etc. This may be a cathode ray tube, screen, rear-projection slide viewer, or a simple typewriter device which prints out instructions on paper.

Furniture for areas that feature computer utilization is usually specially designed, and I will not attempt to identify these formats. The reader is referred to an excellent summary of this topic, as well as many others treated in this article, in *Instructional Hardware/A Guide to Architectural Requirements*, a report from Educational Facilities Laboratories.⁵

AREA PARTITIONS AND CABINETS

Consistent with our changing times, the internal space of the library will become more adaptable to shifting divisions of functional areas. New cabinet and partition techniques facilitate this malleability. One problem that faces free-standing partitions is stability. Extending tension poles between ceiling and floor is one answer to this problem. Another is the gracefully curving partition that adds a soft interest to a casual reading area and, because of its porous fabric surface and curved shape, reduces distracting and tiring noise.

One solution to the cabinet and administrative control area that merits special mention is an arrangement whereby the staff member can stand at a bar-like cabinet, perform several tasks and still remain mobile. Power is carried through a cabinet leg in this model. Other cabinets in this system combine with hook-on properties to afford as comprehensive an administrative area as deemed necessary. The tote-bin cabinet should be explored more fully as a solution for keeping unusually shaped objects, such as headsets, cassettes, etc.

In this article I have attempted to explore in a limited way some of the latest approaches to furniture and facilities design for multi-media use in libraries, including a rationale for selection. The reader is reminded that there are many publications that treat this subject and that the field is changing rapidly. A perusal of the Additional References and the Appendix will yield more information.

References

1. Wiest, Jerome D., and Levy, Ferdinand K. *A Management Guide to PERT/CPM*. Englewood Cliffs, N.J., Prentice-Hall, 1969.
2. Toffler, Alvin. *Future Shock*. New York, Random House, 1970.
3. North Carolina. Dept. of Public Instruction. Division of School Planning. *Learning Resources Library* (Its School Planning Guide Series 2, Publication no. 387). Raleigh, 1965.
4. Library Equipment Institute, 3d, New York, 1966. *The Procurement of Library Furnishings: Specifications, Bid Documents, and Evaluation; Proceedings*. Frazer G. Poole and Alphonse E. Trezza, eds. Chicago, ALA, 1969.
5. Educational Facilities Laboratories. *Instructional Hardware/A Guide to Architectural Requirements*. New York, 1970.

ADDITIONAL REFERENCES

- American Association of School Librarians. Knapp School Libraries Project. *Impact; The School Library and the Instructional Program, a Report on Phase I of the Knapp School Libraries Project*. Prepared by Peggy Sullivan. Chicago, ALA, 1967.
- American Library Association. *School Activities and the Library*. Chicago, ALA, 1970, pp. 15-16.
- American Library Association. Library Technology Project. *Library Technology Reports; A Service to Provide Information on Library Systems, Equipment, and Supplies to the Library Profession*. William P. Cole, ed. Chicago, 1965- .
- Darling, Richard L. "Changing Concepts in Library Design," *American School and University*, 37:98-100, May 1965.
- Educational Facilities Laboratories. *Educational Change and Architectural Consequences; A Report on Facilities for Individualized Instruction*. New York, Educational Facilities Laboratories, 1968.
- Elementary School Instructional Resources Center* (ERIC reprint ED 027 048). Milwaukee, Milwaukee Public Schools, 1967.
- Ellsworth, Ralph E., and Wagener, Hobart D. *The School Library; Facilities for Independent Study in the Secondary School*. Ruth Weinstock, ed. New York, Educational Facilities Laboratories, 1963.
- Henne, Frances E. "Learning to Learn in School Libraries," *School Libraries*, 15:15-23, May 1966.
- Johnson, Ted. "New Technology and Old Intentions," *Illinois Education*, 58:322-24, April 1970.
- Mahar, Mary Helen. *The School Library as a Materials Center; Educational Needs of Librarians and Teachers in Its Administration and Use* (U.S. Office of

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- Education. Circular No. 708). Washington, D.C., U.S. Dept. of Health, Education, and Welfare, Office of Education, 1963.
- Mason, Ellsworth. "Contemporary Education: A Double View," *Library Journal*, 94:4201-06, Nov. 15, 1969.
- "Media to Teach International Development," *Audiovisual Instruction*, 15:64-100, March 1970.
- North Hills School District, Pittsburgh, Pennsylvania. *Library Instructional Media Program: Policy and Routine Manual*. Pittsburgh, North Hills School District, n.d.
- Poole, Frazer G., ed. "Library Furniture and Furnishings," *Library Trends*, 13:385-516, April 1965.
- Rogers, Margaret. *How Does the Secondary School Library Become an Instructional Materials Center? Personnel, Program, Materials, Housing* (ERIC reprint ED 027 049). Eugene, Oregon School Study Council, 1968.
- "Special Issue: ITV Access Systems," *Educational Television*, 2:6-32, June 1970.
- "Special Issue: Planning Modern Learning Facilities," *Educational Technology*, 10:7-25, June 1970.
- "Special Section: Educational Trends and Media Programs in School Libraries," *ALA Bulletin*, 63:221-72, Feb. 1969.
- Taylor, James L., et al. *Library Facilities for Elementary and Secondary Schools* (U.S. Office of Education. Special Publication, No. 10). Washington, D.C., U.S. Dept. of Health, Education, and Welfare, Office of Education, 1965.

APPENDIX

SELECTED SOURCE LIST OF SUPPLIERS, ILLUSTRATING TRENDS MENTIONED IN THE PRECEDING ARTICLE

AV Individual Study Station

The Worden Company
199 East 17th Street
Holland, Michigan 49423

Cassette Album

Electronic Systems for Education, Inc.
800 Roosevelt Road
Glen Ellyn, Illinois 60137

Computer Graphics Training Center

Computer Graphics, Inc.
1400 Park Building
Pittsburgh, Pennsylvania 15222

Comsto (Comprehensive Storage Components)

Mutschler School Storage
Box DM-1
Nappanee, Indiana 46550

Flexiduct—Rubber Floor Duct

Winders and Geist, Inc.
1821 Yolande
P.O. Box 1948
Lincoln, Nebraska 68501

Fullspace Book Storage—Compressed Storage

Lundia, Myers Industries, Inc.
224 W. Cerro Gordo Street, P.O. Box 309
Decatur, Illinois 62525

Furniture for Libraries

Steelcase, Inc.
Grand Rapids, Michigan 49501

Howe Audiovisual Furniture

Howe Folding Furniture, Inc.
360 Lexington Avenue
New York, New York 10017

Innovative Library Furniture

Educators Manufacturing Company
3401 Lincoln Avenue
Tacoma, Washington 98401

Library Microfilm Reader/Carrel and Book Trolley

Library Microfilms and Materials Company
5709 Mesner Avenue
Culver City, California 90230

Library/Resource Center Furniture—Individualized Study
—Acousti-Tables

McNeff Industries, Inc.
2414 Vinson Street
P.O. Box 10626
Dallas, Texas 75207

Furniture and Related Facilities

Modernfold

New Castle Products, Inc.
New Castle, Indiana 47362

Monitor Cabinets—Multi-use Chairs

Tacoma Millwork Supply Company
3000 South Alaska
Tacoma, Washington 98409

Movable Walls and Space Dividers

Claridge Products and Equipment, Inc.
Harrison, Arkansas 72601

Rotopanel—Curved Partitions

Rosemount Partitions, Inc.
9834 James Circle South
Minneapolis, Minnesota 55541

Sunar S System—Clip-on Tables, Work Walls, etc.

Sunar Industries Limited
Waterloo, Ontario
Canada

12 Channel Wireless Equipment

P/H Electronics
117 East Helena Street
Dayton, Ohio 45404